

IN THE CLAIMS

1. (Previously Presented) A computer readable storage medium having instructions, which when implemented by a computer generate client side markup for a client in a server/client system, the instructions comprising:

a set of controls defined in an authoring page for a website for defining desired visual renderings and at least one of recognition and audible prompting on a client in a server/client system, each control having a first set of attributes directly related to visual rendering and a second set of attributes directly related to at least one of recognition and audibly prompting, the controls being related to client side markup executable by a client browser; and

a module operable on a computer, the module being configured to receive the authoring page, and wherein the module is further configured to generate, using modality dependent attributes provided directly from the controls on the authoring page, client side markup executable by the client browser on the client in the server/client system in accordance with the controls and the attributes of the controls to perform both visual rendering and at least one of recognition and audibly prompting.

2. (Previously Presented) The computer readable storage medium of claim 1 wherein one of the second set of attributes for one of the controls relates to a grammar to use for recognition.

3. (Previously Presented) The computer readable storage medium of claim 2 wherein said one of the second set of attributes provides a reference to a location of the grammar.

4. (Previously Presented) The computer readable storage medium of claim 2 wherein the grammar is for one of speech recognition, handwriting recognition, gesture recognition and visual recognition.

5. (Previously Presented) The computer readable storage medium of claim 4 wherein the controls relate to one of HTML, XHTML, cHTML, XML and WML.

6. (Previously Presented) The computer readable storage medium of claim 1 wherein the controls relate to one of HTML, XHTML, cHTML, XML and WML.

7. (Previously Presented) The computer readable storage medium of claim 1 wherein one of the second set of attributes for one of the controls provides instructions related to generating audible output.

8. (Previously Presented) The computer readable storage medium of claim 7 wherein the instructions comprise text and the attribute relates to converting the text to audible output.

9. (Previously Presented) The computer readable storage medium of claim 1 wherein one of the second set of attributes for one of the controls relates to a location of data for audible output.

10. (Previously Presented) The computer readable storage medium of claim 9 wherein the data comprises a prerecorded audio data file and the attribute relates to playing the prerecorded audio data file.

11. (Previously Presented) The computer readable storage medium of claim 9 wherein the data comprises text and the attribute relates to converting the text to audible output.

12. (Currently Amended) A computer readable storage medium having instructions defined on an authoring page for a website, which when implemented by a computer generate client side markup for a client in a server/client system, the instructions comprising:

a first set of ~~modality-dependent visual controls having attributes directly related to~~  
a first modality of interaction with a user of the client that being defining

desired visual renderings on the client device, the first set of controls being related to client side markup executable by a client browser and  
a second set of ~~modality dependent controls having attributes directly related to a~~ second modality of interaction with a user of the client that being defining ~~desired operation on the client device comprising at least one of recognition~~ and audibly prompting, wherein attributes related to audible prompting include at least one of inline text for text-to-speech conversion, location of data for audible rendering and playing of a prerecorded audio file, the second set of controls using at least one of the first controls, the second set of controls being related to client side markup executable by a client browser; and  
a module operable on a computer, the module being configured to receive the authoring page, which includes a plurality of the second set of controls, wherein the module is further configured to process the plurality of the second set of controls from the authoring page to generate client side markup directly from the modality dependent controls that is executable by the client browser on the client in the server/client system in accordance with the second set of controls and the attributes of the second set of controls for at least one of recognition and audibly prompting, and wherein the module is configured to use at least one of the first set of controls from the authoring page in order to generate markup directly therefrom when processing each of the second set of controls.

13. (Previously Presented) The computer readable storage medium of claim 12 wherein one of the attributes for the second set of controls relates to a grammar to use for recognition.

14. (Previously Presented) The computer readable storage medium of claim 13 wherein said one of the attributes provides a reference to a location of the grammar.

15. (Previously Presented) The computer readable storage medium of claim 13 wherein the grammar is for one of speech recognition, handwriting recognition, gesture recognition and visual recognition.

16. (Previously Presented) The computer readable storage medium of claim 15 wherein the first set of controls and the second set of controls relate to one of HTML, XHTML, cHTML, XML and WML.

17. (Previously Presented) The computer readable storage medium of claim 12 wherein the controls relate to one of HTML, XHTML, cHTML, XML and WML.

18. (Previously Presented) The computer readable storage medium of claim 12 wherein one of the second set of attributes for one of the controls provides instructions related to generating audible output.

19. (Previously Presented) The computer readable storage medium of claim 18 wherein the instructions comprise text and the attribute relates to converting the text to audible output.

20. (Previously Presented) The computer readable storage medium of claim 12 wherein one of the second set of attributes for one of the controls relates to a location of data for audible output.

21. (Previously Presented) The computer readable storage medium of claim 20 wherein the data comprises a prerecorded audio data file and the attribute relates to playing the prerecorded audio data file.

22. (Previously Presented) The computer readable storage medium of claim 20 wherein the data comprises text and the attribute relates to converting the text to audible output.

23. (Currently Amended) A computer readable storage medium having instructions, which when implemented by a computer generate client side markup for a client in a server/client system, the instructions comprising:

- a first set of visual controls defined on an authoring page for a website having
  - attributes related to a first modality of interaction with a user of the client that being visual renderings on the client device, the first set of controls being related to client side markup executable by a client browser; and
- a second set of controls defined on the authoring page for defining desired operation on the client device having attributes related to a second modality of interaction with a user of the client that being at least one of recognition and audible prompting, wherein attributes related to recognition include at least one of location of grammar for use in recognition and confidence level thresholds for recognition and wherein attributes related to audible prompting include at least one of inline text for text-to-speech conversion, location of data for audible rendering and playing of a prerecorded audio file, the second set of controls being selectively associated with the first set of controls and wherein values of the second set of controls are synchronized with the first set of visual controls, and the second set of controls being related to client side markup executable a client browser; and
- a module operable on a computer, the module being configured to receive the authoring page, wherein the module is further configured to process the controls of the first set in the authoring page to generate client side markup for the first modality of interaction by incorporating the attributes in the controls that is executable by the client browser on the client in the server/client system in accordance with the controls of the first set and the attributes of the controls of the first set to perform both visual rendering, and wherein the module is further configured to process the controls of the

second set to generate client side markup for the second modality of interaction by incorporating the attributes in the controls that is executable by the client browser on the client in the server/client system in accordance with the controls of the second set and the attributes of the controls of the second set in the authoring page to perform at least one of recognition and audibly prompting.

24. (Previously Presented) The computer readable storage medium of claim 23 wherein one of the attributes for the second set of controls relates to a grammar to use for recognition.

25. (Previously Presented) The computer readable storage medium of claim 24 wherein said one of the attributes provides a reference to a location of the grammar.

26. (Previously Presented) The computer readable storage medium of claim 24 wherein the grammar is for one of speech recognition, handwriting recognition, gesture recognition and visual recognition.

27. (Previously Presented) The computer readable storage medium of claim 26 wherein the first set of controls and the second set of controls relate to one of HTML, XHTML, cHTML, XML and WML.

28. (Previously Presented) The computer readable storage medium of claim 23 wherein the controls relate to one of HTML, XHTML, cHTML, XML and WML.

29. (Previously Presented) The computer readable storage medium of claim 23 wherein one of the second set of attributes for one of the controls provides instructions related to generating audible output.

30. (Previously Presented) The computer readable storage medium of claim 29 wherein the instructions comprise text and the attribute relates to converting the text to audible output.

31. (Previously Presented) The computer readable storage medium of claim 23 wherein one of the second set of attributes for one of the controls relates to a location of data for audible output.

32. (Previously Presented) The computer readable storage medium of claim 31 wherein the data comprises a prerecorded audio data file and the attribute relates to playing the prerecorded audio data file.

33. (Previously Presented) The computer readable storage medium of claim 31 wherein the data comprises text and the attribute relates to converting the text to audible output.

34. (Previously Presented) The computer readable storage medium of claim 23 wherein one of the attributes of the second set of controls relates to an identifier of the associated control of the first set of controls to form the association.

35. (Previously Presented) The computer readable storage medium of claim 23 wherein one of the attributes relates to whether the associated control of the second set is available for activation.

36. (Previously Presented) The computer readable storage medium of claim 35 wherein activation relates to generating markup.

37. (Previously Presented) The computer readable storage medium of claim 35 wherein activation relates to execution on the client.

38. (Previously Presented) The computer readable storage medium of claim 23 wherein the second set of controls activates another control of the second set.

39. (Previously Presented) The computer readable storage medium of claim 23 wherein the second set of controls comprise:

a question control for generating markup related to audible prompting of a question; and  
an answer control for generating markup related to a grammar for recognition.

40. (Previously Presented) The computer readable storage medium of claim 39 wherein the question control activates the answer control.

41. (Previously Presented) The computer readable storage medium of claim 40 wherein the answer control includes a mechanism to associate a received result with one of the first set of controls.

42. (Previously Presented) The computer readable storage medium of claim 41 wherein mechanism includes binding the recognition value.

43. (Previously Presented) The computer readable storage medium of claim 42 wherein the mechanism includes issuing an event related to operation of binding.

44. (Previously Presented) The computer readable storage medium of claim 40 wherein the second set of controls comprise:

a command control for generating markup related to a grammar for one of navigation in the markup, help with a task, and repeating an audible prompt.

45. (Previously Presented) The computer readable storage medium of claim 40 wherein the second set of controls comprise:

a confirmation control for generating markup related to confirming that a recognized result is correct.

46. (Previously Presented) The computer readable storage medium of claim 45 wherein the confirmation control includes an attribute related to the recognized result to be confirmed.

47. (Previously Presented) The computer readable storage medium of claim 46 wherein the answer control includes an attribute related to a confidence level.

48. (Previously Presented) The computer readable storage medium of claim 46 wherein the confirmation control is activated as a function of a confidence level of a received result.

49. (Previously Presented) The computer readable storage medium of claim 48 wherein the confirmation control activates an accept control to accept the recognized result.

50. (Previously Presented) The computer readable storage medium of claim 48 wherein the confirmation control activates a deny control to deny the recognized result.

51. (Previously Presented) The computer readable storage medium of claim 48 wherein the confirmation control activates a correct control to correct the recognized result.

52. (Previously Presented) A computer implemented method for defining a website application on a server in a server/client architecture, the website application providing markup to a client for performing recognition and/or audible prompting on the client, the method comprising:

defining the website application by creating an authoring page with a first set of visual controls having attributes related to a first modality of interaction with a user of the client that being visual rendering on the client device, and with a second set of controls having attributes related to a second modality of interaction with the user of the client that being at least one of recognition and audibly prompting, wherein attributes related to audible prompting include at least one of inline text for text-to-speech conversion, location of

data for audible rendering and playing of a prerecorded audio file, and wherein the first set of controls and the second set of controls being related to client side markup executable by a client browser, wherein defining includes selectively associating controls of the second set of controls with at least one control of the first set of visual controls; and

processing the controls on the authoring page to generate client side markup including processing of the first set of visual controls to generate client side markup for the first modality of interaction executable by the client browser on the client in the server/client system in accordance with the controls of the first set and the attributes of the controls of the first set to perform visual rendering, and processing the controls of the second set to generate client side markup for the second modality of interaction by incorporating the attributes in the controls of the second set to perform at least one of recognition and audibly prompting.

53. (Withdrawn) The computer implemented method of claim 52 wherein each of the controls of the second set include an identifier attribute for identifying a control of the first set of visual controls, and wherein associating includes providing an identifier of at least one control of the first set of controls in the corresponding identifier attribute of each of the second set of controls.

54. (Withdrawn) The computer implemented method of claim 52 wherein the second set of controls includes a question control related to audible prompting of a question, and an answer control related to a grammar for recognition; and wherein defining the website application with a second set of controls related to at least one of recognition and audibly prompting includes associating the answer control with the question control.

55. (Withdrawn) The computer implemented method of claim 54 wherein the second set of controls includes a confirmation control related to confirming that a recognized result is correct;

and wherein defining the website application with a second set of controls related to at least one of recognition and audibly prompting includes associating the confirmation control with a recognized result to be received.

56. (Withdrawn) The computer implemented method of claim 55 wherein the second set of controls includes a command control for generating markup related to a grammar for one of navigation on the computer, help with a task, and repeating an audible prompt; and wherein defining the website application with a second set of controls related to at least one of recognition and audibly prompting includes associating the command control with a question control.